On page 4, please insert --BRIEF DESCRIPTION OF THE DRAWINGS-- between lines 3 and 4.

On page 4, please insert --DETAILED DESCRIPTION OF THE INVENTION-- between lines 18 and 19.

IN THE CLAIMS

Please amend claims 1-8 as follows:

Sub B1 A1 cont.

1. (Amended) A method for determining the position of a mobile station located in [the] a coverage area of a base station in a radio system and for using said location information, in which method the base station comprises equipment for receiving signals from the same mobile station simultaneously by at least two antenna beams [(A)] directed in different directions, [and in which] the method comprising:

measuring [the] signal levels [(B)] of [the] signals received from a same mobile station by [the] different antenna beams [are measured],

comparing the signal levels of the signals received from the same mobile station by the different antenna beams [are compared (C, D, E)],

determining [the] a direction to the mobile station in relation to the base station [is determined] on the basis of [the] a relations between the signal levels [(F, G, H, I, J)] measured for the different antenna beams, and

calculating [the] a distance from the mobile station to the base station [is calculated] on the basis of a timing advance [(TA)], given to the mobile station by the base station and [the] propagation speed of the radio signals, [**c h a r a c t e r i z e d** in that] wherein said distance and said direction is used for making a handover decision on the basis of the location of the mobile station.

2. (Amended) A method according to claim 1, [**c h a r a c t e r i z e d** in] wherein calculating a mean value for the measuring results during a determined time period [(C)] and determining the direction to the mobile station on the basis of the relations between the calculated mean values.

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3. (Amended) A method according to claim 1, [**characterized** in] wherein choosing a beam by which signals with the strongest signal level have been received and at least one of the adjacent beams (D), comparing the measured signal levels for the antenna beams [in question (E)], and determining the direction to the mobile station on the basis of the relation between the signal levels for the chosen antenna beams.

Cont. A1

4. (Amended) A method according to claim 1, [**characterized** in] wherein determining that the mobile station is located

- in the centre [(A1)] of the first chosen beam, if [the] signal level (RSSI1) of the signals received by the beam [in question (1)] is essentially higher than [the] a signal level (RSSI2) of the signals received by the other chosen antenna beam [(2)],

- in [the] a border area [(A2)] between the antenna beams, if the signal level (RSSI1, RSSI2) of the signals received by the chosen antenna beams [(1, 2)] [is] are substantially the same, and

- between [(A3)] the centre [(A1)] of the first chosen antenna beam [(1)] and the border zone [(A2)] of the beams [(1, 2)], if the signal level (RSSI1) of the signals received by the first antenna beam [(1)] is somewhat higher than the signal level (RSSI2) of the signals received by the other antenna beam.

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5. (Amended ~~Twice~~) Base station (BTS1) of a radio system, which base station comprises:

antenna equipment [(1 - 4, 6, 7)] for receiving signals from a certain mobile station simultaneously by at least two antenna beams [(1 - 4)] directed in different directions,

measuring equipment [(8)] for measuring the signal levels of the signals received by the different antenna beams,

equipment for defining a timing advance [(TA)] for the mobile station [(MS)] which is in radio connection with the base station to compensate for a time lag caused by the distance between the mobile station and the base station, and

calculation means [(9)] which are responsive to the measuring equipment [(8)] for determining the direction from the base station [(BTS1)] to the mobile station [(MS)] on the basis of the relations of the signal levels measured for the different antenna beams [(1 - 4)] and which calculating means [(9)] comprise equipment for calculating the distance between distance between the base station [(BTS1)] and the mobile station [(MS)] on the basis of the timing advance [(TA)] defined for the mobile station and the propagation speed of the radio signals, [**c h a r a c t e r i z e d** in that]

wherein said calculation means are adapted to transmit said direction and said distance further in the system in order to be used for making handover decisions.

6. (Amended) Base station according to claim 5, [**characterized** in that] wherein that the calculation means [(9)] are arranged for calculating for each beam [(1 - 4)] the mean value of the signal levels of the signals received from the mobile station [(MS)] by the respective antenna beams, whereby the calculation means [(9)] are arranged to determine the direction from the base station [(BTS1)] to the mobile station [(MS)] on the basis of relations between the calculated mean values.

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7. (Amended) Base station according to claim 5, [**characterized** in that] wherein that the calculation means [(9)] include means for choosing the antenna beam (1) with the strongest signal level and at least one adjacent beam (2), [whereby] wherein the calculating means [(9)] are arranged for determining the direction from the base station [(BTS1)] to the mobile station [(MS)] on the basis of the relations of the signal levels (RSSI1, RSSI2) of the signals received via the chosen antenna beams (1, 2).

8. (Amended) Base station according to claim 5, [**characterized** in that] wherein said base station is a base station [(BTS1)] of a cellular radio system divided into logical traffic channels in accordance with a TDMA principle.

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